



# Tunica Vasculosa Lentis as an Independent Risk Factor for Treatment in Retinopathy of Prematurity

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# Relevant Financial Disclosures

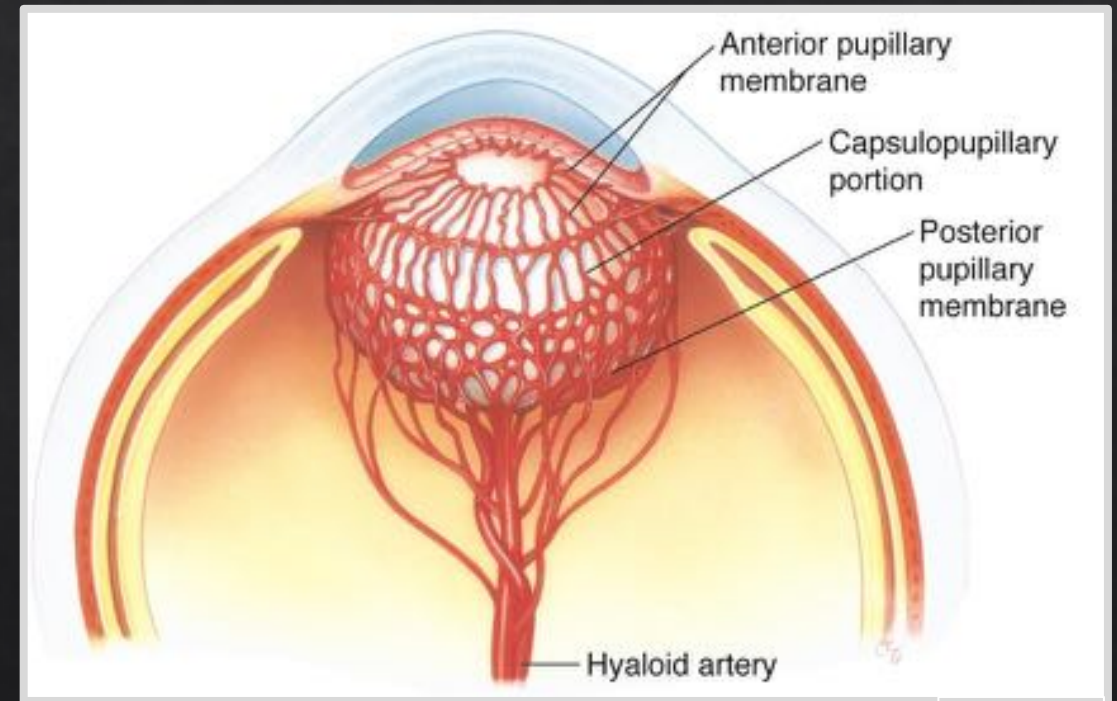
◇ None

# Outline

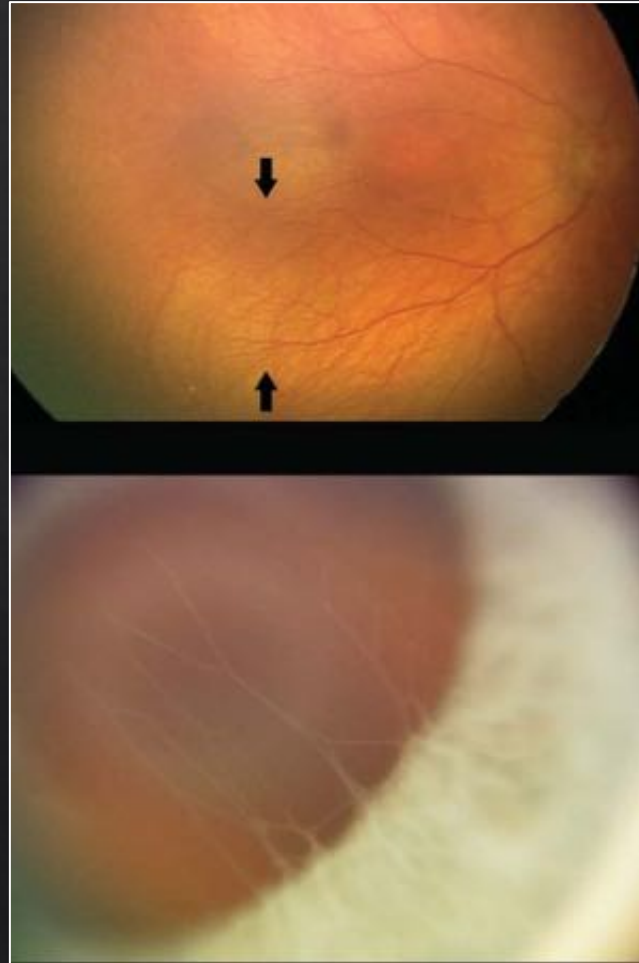
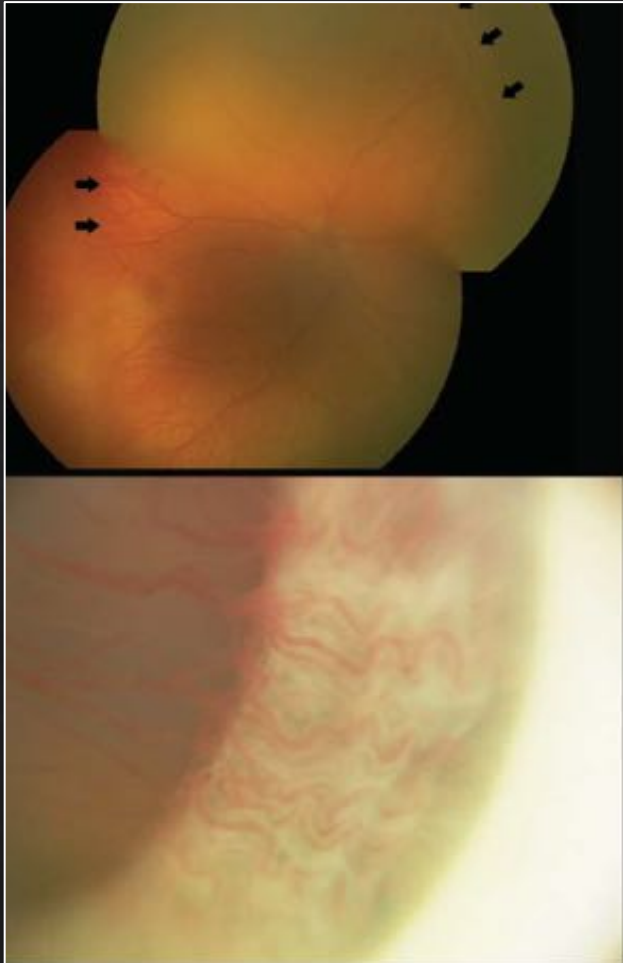
- ◇ Background
- ◇ Purpose
- ◇ Methods
- ◇ Results
- ◇ Considerations

# Background

- ◇ Tunica vasculosa lentis ( TVL) is a vascular network that aides in development of the lens
- ◇ TVL can be identifiable on neonatal screening examination
- ◇ TVL growth and regression is VEGF dependent
- ◇ There is limited data correlating TVL with ROP outcomes



# Background- TVL Anti-VEGF Response



- 30 week, hazy posterior view
- Anterior segment photo 2 days after intravitreal bevacizumab

# Purpose

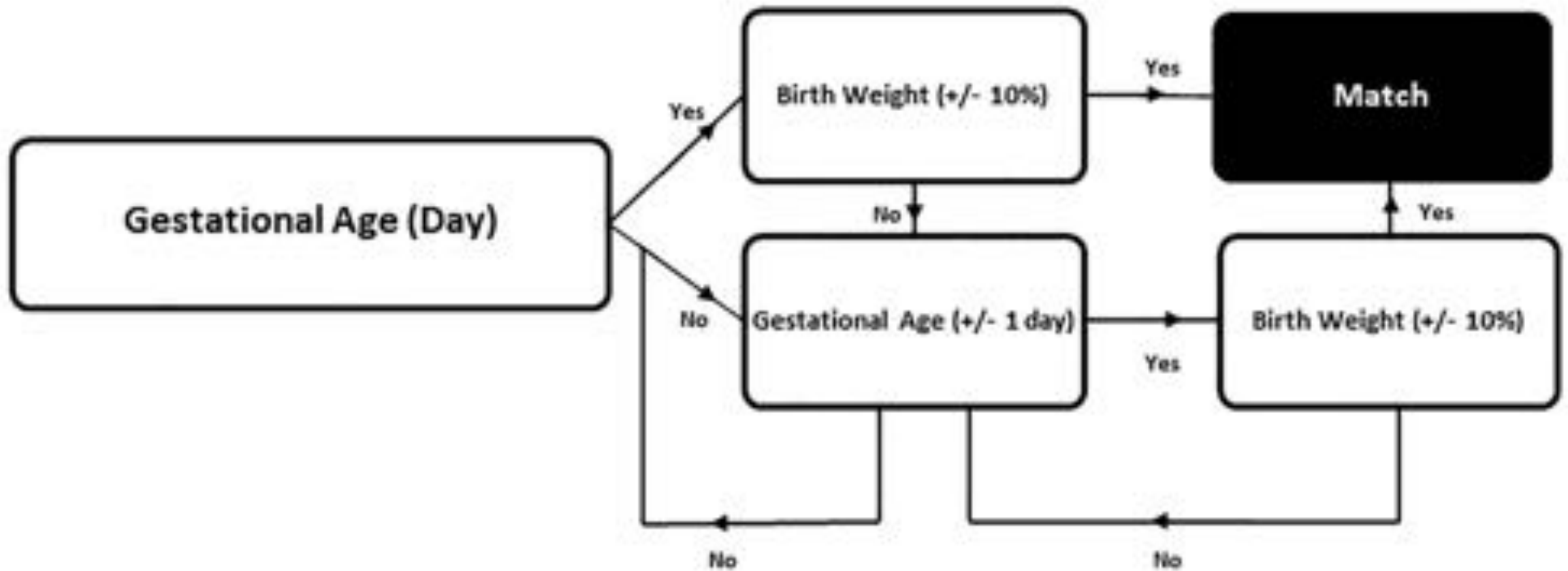
To assess whether persistent tunica vasculosa lentis (TVL) on neonatal screening examination affects the rate of treatment required in retinopathy of prematurity (ROP).

# Methods

- ◆ Single ROP screener 2009-2019
- ◆ Those with TVL matched 1:1 on birth weight and gestational age at birth
- ◆ Outcomes included rate of treatment with laser or intravitreal bevacizumab, plus disease, zone 1, and stage 2 or 3 ROP
- ◆ Paired t-test, Chi square analysis and McNemar's test were used in the analysis

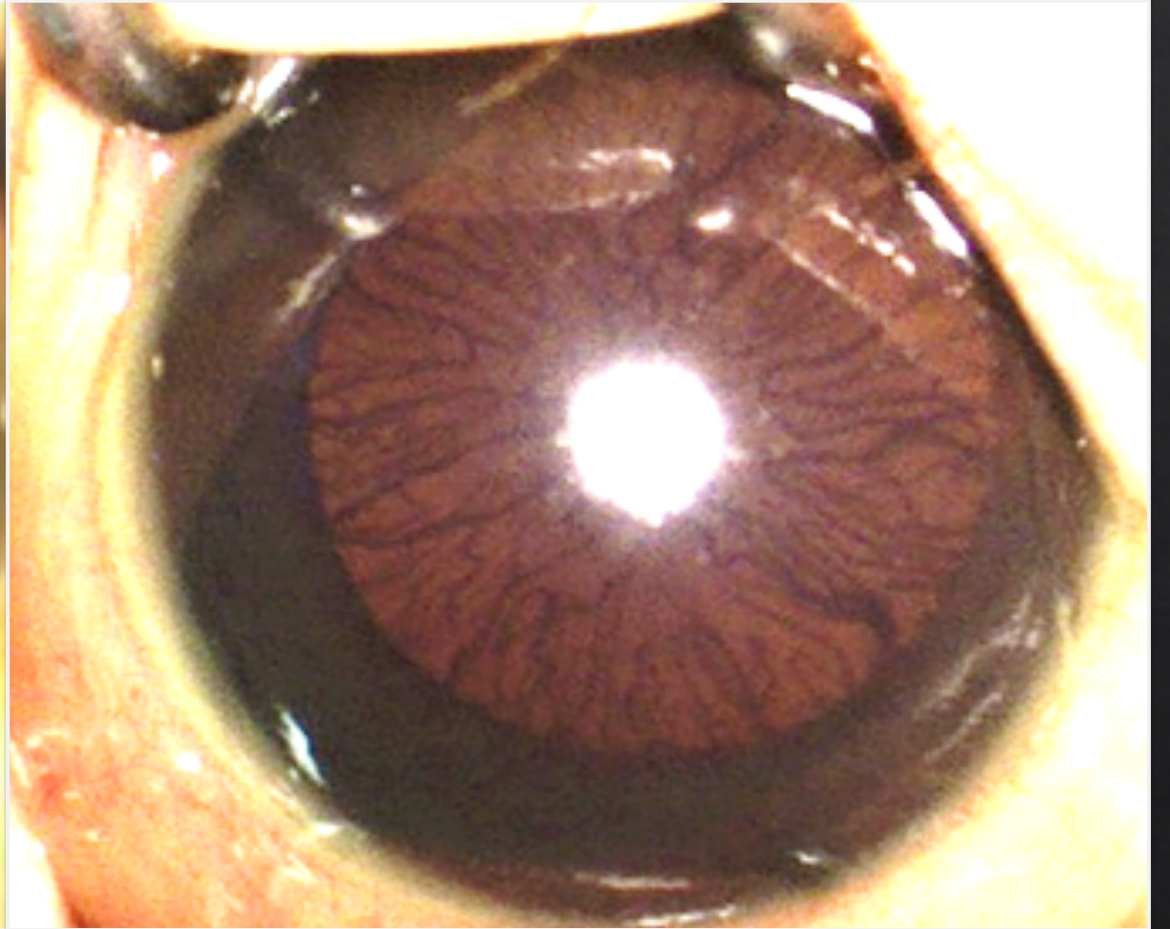
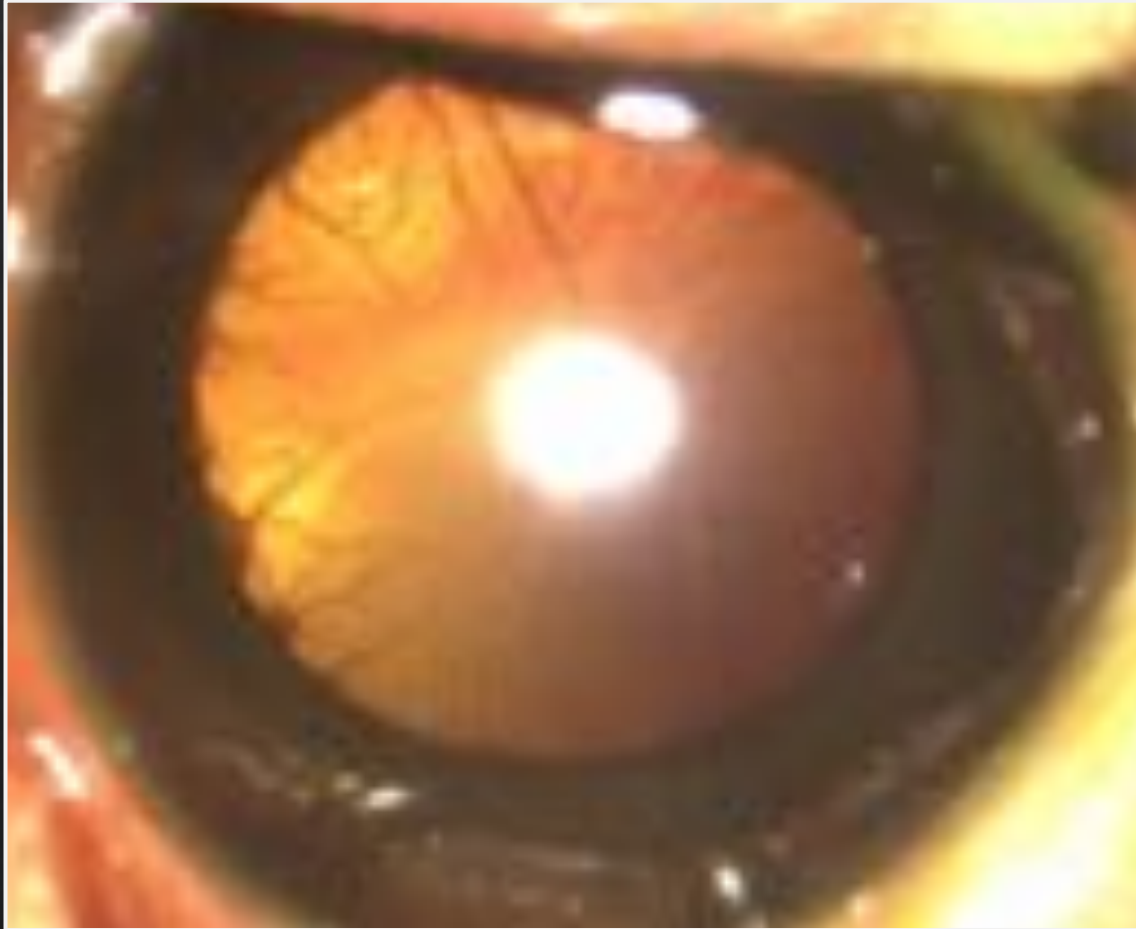


# Matching Algorithm





# Representative Photos



# Results

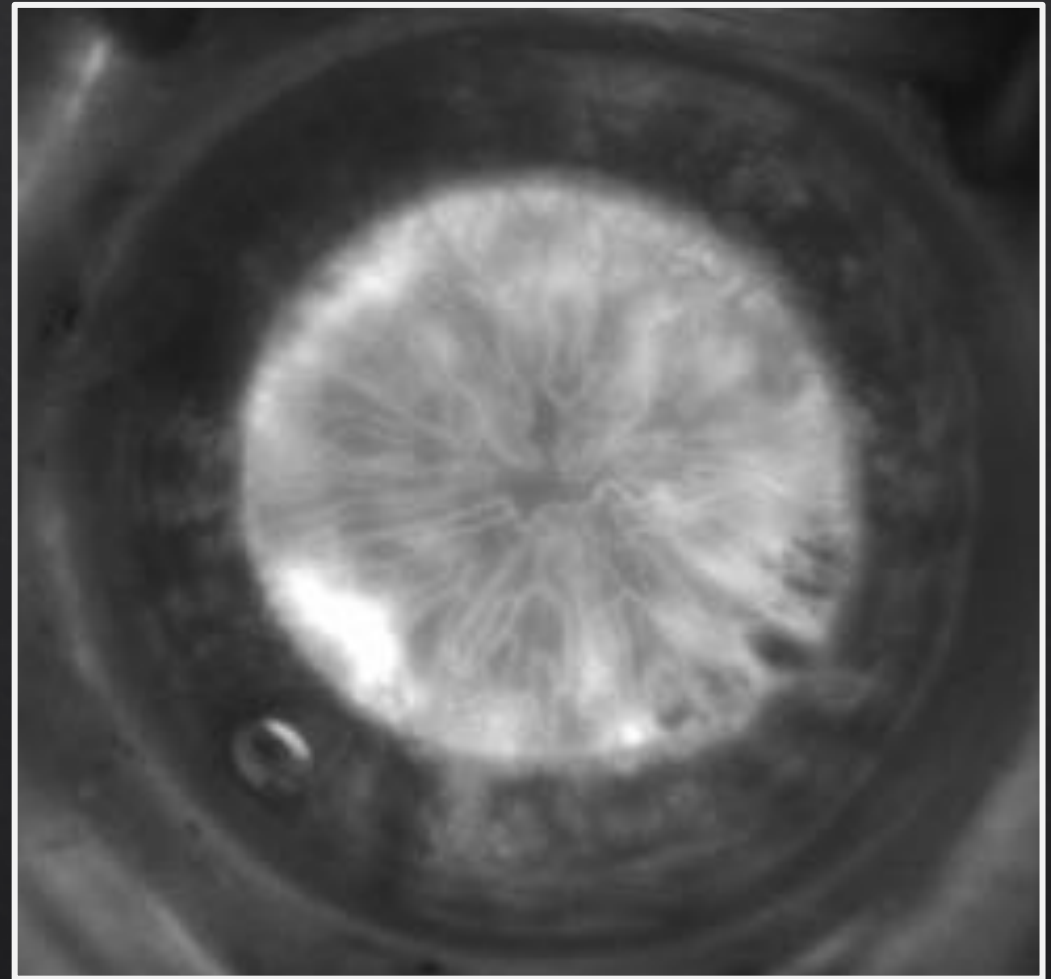
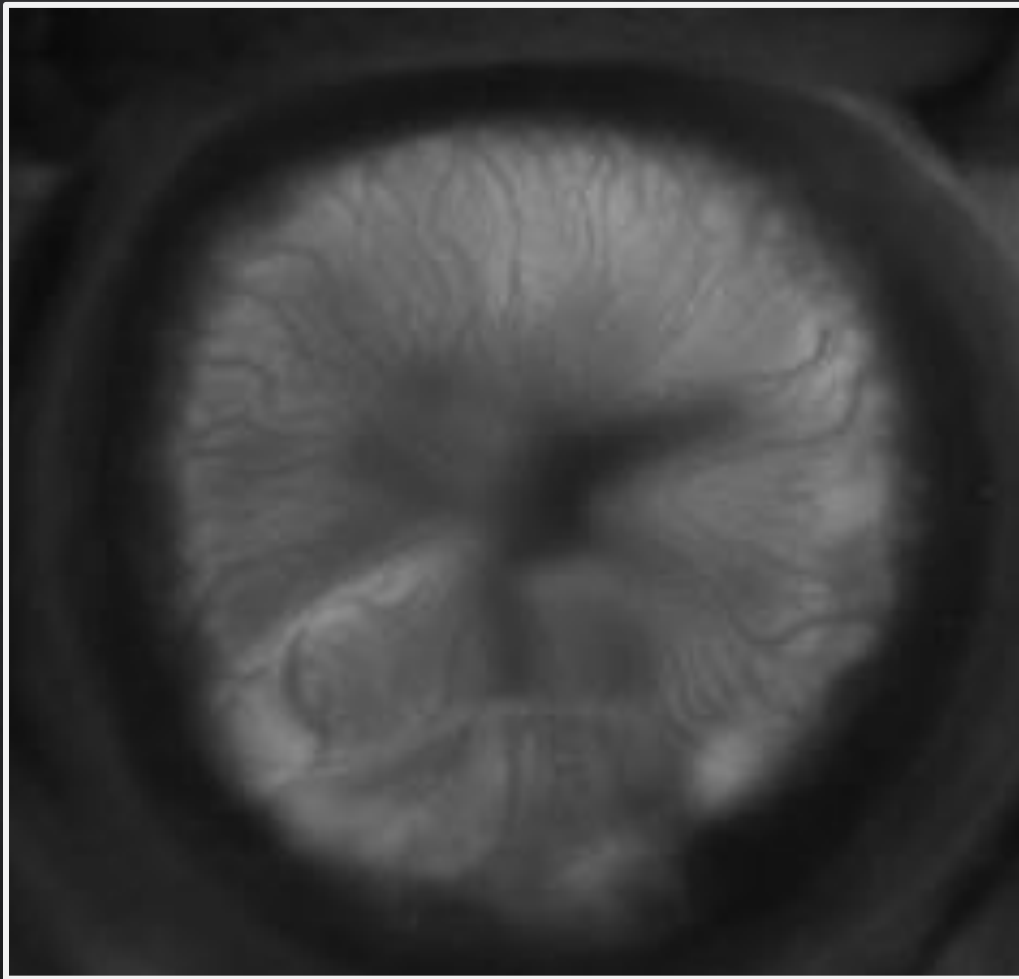
**Table 1. Baseline Demographics**

<b>Characteristic</b>	<b>Tunica Cases</b>	<b>Matched Cases</b>	<b>P -Value</b>
Number of Patients	94	94	
Average Birth Weight (Grams) <sup>1</sup>	715.70	716.02	0.95
Average Birth Gestational Age (weeks) <sup>1</sup>	25.72	25.71	0.560
Multiparity <sup>1</sup>	15	13	0.83
TVL at First Visit <sup>1</sup>	76 (80.85%)	0	

# Results

**Table 2. Outcomes**

Characteristic	Tunica Cases	Matched Cases	P -Value	Odds Ratio	Confidence
Total Treated <sup>2</sup>	29 (30.85%)	10 (10.64%)	<0.001	4.80	1.8-16.1
Bevacizumab Intravitreal	26 (27.66%)	6 (6.38%)			
Laser	8 (8.51%)	4 (4.26%)			
Retreatment <sup>3</sup>	5 (5.32%)	0	0.302		
Post Conception Age at Treatment <sup>1</sup>	36.39	37.90	0.225		
Plus Disease <sup>2</sup>	25 (26.60%)	16 (17.02%)	0.136		
ROP <sup>2</sup>	76 (80.85%)	69 (73.40%)	0.119		
Zone 1	15 (15.96%)	2 (2.12%)	0.002	7.50	1.74-67.6
Stage 2 or 3	59 (62.77%)	53 (56.38%)	0.239		



In the TVL group 24% were noted to have a hazy view

# Regression Analysis

- ◇ The positive correlation between the presence of TVL and rate of treatment in ROP was demonstrated in logistic regression including independent factors:
  - ◇ Birth weight
  - ◇ Gestation age
  - ◇ Plus disease
  - ◇ Multiparity



# Conclusions and Significance

- ◇ Largest study to date on the subject of TVL and ROP outcomes
- ◇ Those with TVL on ROP screening have a worse prognosis with **higher rates of treatment requirement and zone 1 disease** when compared to age and birthweight matched controls
- ◇ More frequent examinations could be considered in those with persistent TVL on initial screening
- ◇ TVL may play a role in remote ROP screening and could warrant referral to a specialist
- ◇ TVL could be a consideration in AI or mixed ROP prediction algorithms

# Thank You

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